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PATENT SPECIFICATION



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COMPLETE SPECIFICATION

Improvements relating to Infants' Napkins

I, MICHAEL MERICA, a British Subject, of 98, Dene Road, Didsbury, Manchester, 20 in the County of Lancaster, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to infants' napkins, and more particularly to those of the so-called "disposable" type comprising a rectangular or other pad of soluble cellulosic tissue, usually in a plurality of layers and confined within an outer wrapper of textile gauze.

Napkins of the type aforesaid provide considerable absorptive capacity at a very low price as compared with the conventional diapers made of towelling, and many persons in charge of infants prefer to purchase a succession of such articles, which, after a single use, can readily be disposed of in a variety of ways, rather than face the recurrent and unpleasant necessity of washing non-expendable diapers as soon as they have become soiled.

A "disposable" napkin, however, requires supporting in contact with the infant's person by means of some other item of apparel such as a pilch, or more usually, a conventional diaper pinned at the hips or elsewhere, and in the event of the "disposable" napkin receiving a flow of liquid greater than it can immediately absorb, this outer covering itself becomes wetted, as well as, very often, the clothing of a person on whose lap the infant happens to be seated.

The risk of the last-mentioned misfortune is, of course, reduced by the infant wearing, over the pilch or textile diaper, water-proof panties with elastic insertions at the waist and leg openings, but a protective garment of this kind leads to discomfort by reason of its restrictive and heating effects upon the infant's body, and, in the form at present known, it cannot satisfactorily position a "disposable" napkin in the absence of a textile interlay.

However, the only alternative expedient hitherto available has been the laying of a

loose piece of plastic or other waterproof sheeting between the "disposable" napkin and its textile covering, although such an article readily works out of position during movement of the infant and in any case cannot protect the textile covering should the "disposable" napkin be suddenly flooded.

The chief object of the present invention is to provide simple means whereby such flooding of a "disposable" napkin is effectively prevented from causing dampening or soiling of the overlying apparel, a further object being the provision of an improved garment which embodies the invention aforesaid.

According to this invention, I provide a protector in the form of a flexible plastic or other impervious sheet, with inwardly folded parts adapted to overhang and locate the edges of a superimposed "disposable" napkin, and to provide, in conjunction with further inwardly-folded parts of the sheet, a double trough formation adapted to retain any excess of liquid received by said napkin until the latter has had time to absorb it.

One of the trough formations referred to may be produced marginally of the sheet by means of inturned hems on the latter, and/or it may define a medial portion thereof: for example, a protector with a marginal trough designed to accommodate and position a normal size of napkin during the daytime may also be provided with a secondary trough formation of smaller perimeter for receiving a narrower napkin during the night, the duplication of the liquid-retaining means in this manner ensuring complete protection of the adjacent clothing or bed-linen whatever the position of the infant when liquid is discharged.

At least one of the trough formations may be represented by a pair of flat pleats extending lengthwise or transversely of the sheet and folded towards one another.

The protector above described may be held in position by a pilch or textile napkin in known manner or its corners may be secured together at opposite sides of the wearer to form

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a self-supporting protective garment, which latter, owing to its built-in liquid-retaining means, does not necessarily require elastication at its edges.

5 In the accompanying drawings:—

Fig. 1. is a plan view of one form of napkin protector according to the present invention,

10 Fig. 2 is a section, to an enlarged scale, on the line 2—2 of Fig. 1

Fig. 3 is a plan view of a modified form of protector designed, when fastened around an infant's person, to form a self-supporting garment, and

15 Fig. 4 is a front elevation of the resultant garment as it will appear during wear.

In its simplest form, as illustrated in Figs. 1 and 2, the improved protector A is produced from a substantially rectangular piece of thin, flexible polyvinyl-chloride or other impervious sheet measuring 11 to 17 inches long by 11 to 12 inches wide.

20 This sheet is first narrowed down by forming two opposed pleats B adjacent to and equidistant from, its longitudinal centre-line, or, if the initial width of the sheet permits, a further pair of pleats B' may be produced somewhat nearer to its lateral edges, each such pleat being retained in flat condition by two lines of stitching C.

25 Thereafter hems D 1/2 to 1 inch wide are formed along the four edges of the pleated sheet A by suitable stitching E, folded inwards, and sewn together at the corners of sheet, which then becomes a tray measuring 9 to 13 inches long by 7 to 9 inches wide and having a continuous inwardly-opening marginal trough F.

30 The final size of the protector A is optional, but the dimensions quoted are those suited for the accommodation of standard sizes of "disposable" napkins, one of which (indicated at G in Fig. 2) is superimposed upon the protector with its edges engaged beneath and hence positioned by, the intumed hems D.

35 In use, the protector A is applied to the infant so that the associated napkin G effectively covers the appropriate parts of the body, and is retained in such position by a pilch or textile diaper put on afterwards, with or without the assistance of pins passed through eyelets H in or end tabs on, the protector to attach the latter to the inner surface of such outer covering. Correct placement of the protector with reference to the infant's body may be facilitated by sewing rucks in the longer of the hems D, so that the protector will fold naturally at or about its transverse centre-line.

40 In the event of a sudden discharge of liquid or semi-liquid excreta into the napkin G, any which is not immediately absorbed by the adjacent portion of the latter will penetrate through it to the impervious inner surface of the protector A and thence spread into the continuous trough F beneath the intumed hems D,

being thus retained within the boundaries of the protector until it can be absorbed by the previously unaffected portions of the napkin G.

In this way, the full absorptive capacity of the napkin can be utilized before there is any possibility of spillage past the edges of the protector A and this applies irrespective of the position in which the infant happens to be sitting or lying.

Prior to the inturning of the hems D, the flat pleats B are folded inwards to produce two opposed troughs K extending longitudinally of the protector A to receive the edges of a relatively narrow (say 2 inch-wide) strip of napkin material, which will usually be sufficient to absorb any discharge occurring during the night and represents a considerable saving in cost as compared with a full-size napkin such as will normally be inserted in the daytime with its edges in the marginal trough F.

It will be appreciated that the construction above-described affords a particularly high degree of protection against spillage, since two trough formations (or three, if the additional pleats B' are provided and folded inwards as at K') are always available to receive any flow of excess liquid towards either lateral edge of the protector A, regardless of whether a small or a large napkin is accommodated in the latter.

If desired, the pleats B (or B, B') and hence the narrower napkin engaged beneath the pleats B, may extend transversely of the length of the protector A instead of parallel thereto.

As a development of the embodiments above described, the protector A may be provided with integral or other extensions to enable its location upon an infant's body without the aid of a covering pilch or conventional diaper. For example, tapes attached to the four corners of the protector may be tied in pairs, at opposite sides of the infant.

In the preferred arrangement shown in Figs. 3 and 4, however, the protector is designed as a self-supporting protective garment made in the form of a pilch or panties, the plastic or other sheet being cut to a generally trapezoidal shape and provided at its four corners with press-studs L or other suitable means whereby the front and rear portions of the garment may be secured together at both sides of the infant.

The protector A in this case is formed with pleats B, B' which are folded inwards to provide inner and outer pairs of longitudinal troughs, and owing to the effective protection against spillage afforded by these the garment may be relatively loose-fitting at the waist and legs when fastened.

Usually, however, both ends of the protector A, and also the concavely shaped lateral edges defining the leg openings, are provided with elastic insertions in narrow hems M.

Whichever construction is employed, the trough or troughs K, K' and/or the longer runs of the marginal trough F may, if desired, be

be inwardly bowed so as to render the appliance less bulky between the infant's legs.

What I claim is:—

(1) A protector for infants' wear, in the form of a flexible plastic or other impervious sheet, with inwardly-folded parts adapted to overhang and locate the edges of a superimposed "disposable" napkin, and to provide, in conjunction with further inwardly-folded parts of the sheet, a double trough formation capable of retaining any excess of liquid received by the said napkin until the latter has had time to absorb it.

(2) A protector according to Claim 1, further characterised in that one of the trough formations aforesaid is produced marginally of the impervious sheet by means of intumed hems on the latter, such trough formation being continuous around the periphery of the sheet and adapted to position the edges of a napkin of the size normally worn during the daytime.

(3) A protector according to Claim 1 or Claim 2, further characterised in that one of the trough formations is represented by a pair of flat pleats extending lengthwise or transversely of the sheet and folded towards one another to position the edges of a medially-arranged napkin.

(4) A protector with a primary trough formation according to Claim 2 and a secondary trough formation as claimed in Claim 3, further characterised in that the opposed pleats

aforesaid co-operate with parts of the intumed hem to provide a continuous trough of relatively small perimeter and adapted to position the edges of a napkin of the size normally worn at nighttime.

(5) A protector according to Claim 3, further characterised in that a second or third trough formation, as the case may be, is represented by a further pair of inwardly directed flat pleats disposed alongside, and either internally or externally of, the pair previously mentioned.

(6) A protector according to any one of the preceding Claims and having means for attaching it to the inner side of a pilch or textile napkin.

(7) A protector according to any one of the preceding Claims and having means whereby its corners may be fastened together at opposite sides of the wearer to form a self-supporting protective garment.

(8) A protector according to Claim 7 and designed when fastened to form panties elasticated at the waist and leg openings.

(9) A protector for infants' wear, substantially as described with reference to, and as shown in Figs. 1 and 2 or Figs. 3 and 4 of the accompanying drawings.

For the Applicant:—

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PROVISIONAL SPECIFICATION

Improvements relating to Infants' Napkins

I, MICHAEL MERICA, a British Subject, of 98, Dene Road, Didsbury, Manchester, 20, in the County of Lancaster, do hereby declare this invention to be described in and by the following statement:—

This invention relates to infants' napkins and more particularly to those of the so-called "disposable" type comprising a rectangular or other pad of soluble cellulosic tissue, usually in a plurality of layers and confined within an outer wrapper of textile gauze.

Napkins of the type aforesaid provide considerable absorptive capacity at a very low price as compared with the conventional diapers made of towelling, and many persons in charge of infants prefer to purchase a succession of such articles which, after a single use, can readily be disposed of in a variety of ways, rather than face the recurrent and unpleasant necessity of washing non-expendable diapers as soon as they have become soiled.

A "disposable" napkin, however, requires supporting in contact with the infant's person by means of some other item of apparel such as a pilch or, more usually, a conventional diaper pinned at the hips or elsewhere, and in the event of the "disposable" napkin receiving a flow of liquid greater than it can immediately absorb, this outer covering itself be-

comes wetted, as well as, very often, the clothing of a person on whose lap the infant happens to be seated.

The risk of the last-mentioned misfortune is, of course, reduced by the infant wearing, over the pilch or textile diaper, waterproof panties with elastic insertions at the waist and leg openings, but a protective garment of this kind leads to discomfort by reason of its constrictive and heating effects upon the infant's body, and, in the form at present known, it cannot satisfactorily position a "disposable" napkin in the absence of a textile interlay.

However, the only alternative expedient hitherto available has been the laying of a loose piece of plastic or other waterproof sheeting between the "disposable" napkin and its textile covering, although such an article readily works out of position during movement of the infant and in any case cannot protect the textile covering should the "disposable" napkin be suddenly flooded.

The chief object of the present invention is to provide simple means whereby such flooding of a "disposable" napkin is effectively prevented from causing dampening or soiling of the overlying apparel, a further object being the provision of an improved garment which embodies the invention aforesaid.

According to this invention, I provide a protector in the form of a flexible plastic or other impervious sheet, parts of which are folded inwardly so as to overhang and locate the edges of superimposed "disposable" napkin, and to produce, in conjunction with the body of the sheet, a continuous trough formation adapted to retain any excess of liquid received by said napkin until the latter has had time to absorb it.

The trough formation referred to may be produced marginally of the sheet and/or it may define a medial portion thereof; for example, a protector designed to accommodate and position a normal size of napkin during the daytime may also be provided with a secondary trough formation of smaller perimeter for receiving a narrower napkin during the night, the duplication of the liquid-retaining means in this manner ensuring complete protection of the adjacent clothing or bed-linen whatever the position of the infant when liquid is discharged.

The protector above described may be held in position by a pilch or textile napkin in known manner or it may be extended at one or both ends to form a self-supporting protective garment, which latter, owing to its built-in liquid-retaining means, does not require elastication at its edges.

In its simplest form, the improved protector is produced from a substantially rectangular piece of thin, flexible polyvinyl-chloride or other impervious sheeting; such piece measuring 11 to 17 inches long by 9 to 12 inches wide.

Hems $1/2$ to 1 inch wide are formed along the four edges of the piece by suitable stitching, afterwards being folded inwards and sewn together at the corners of the piece, which then becomes a tray measuring 9 to 13 inches long by 7 to 9 inches wide and having a continuous inwardly-opening marginal trough.

The final size of the protector is optional, but the dimensions quoted are those suited for the accommodation of standard sizes of "disposable" napkins, one of which is superimposed upon the protector with its edges engaged beneath, and hence positioned by, the intumed hems aforesaid.

In use, the protector is applied to the infant so that the associated napkin effectively covers the appropriate parts of the body, and is retained in such position by a pilch or textile diaper put on afterwards, with or without the assistance of pins attaching end tabs on the protector to the inner surface of such outer covering. Correct placement of the protector with reference to the infant's body may be facilitated by sewing tucks in the longer hems of the protector, so that the latter will fold naturally at or about its transverse centre-line.

In the event of a sudden discharge of liquid or semi-liquid excreta into the napkin, any

which is not immediately absorbed by the adjacent portion of the latter will penetrate through it to the impervious inner surface of the protector and thence spread into the continuous trough represented by the intumed hems, being thus retained within the boundaries of the protector until it can be absorbed by the previously unaffected portions of the napkin.

In this way, the full absorptive capacity of the napkin can be utilized before there is any possibility of spillage past the edges of the protector and this applies irrespective of the position in which the infant happens to be sitting or lying.

If desired, each edge of the protector sheet may be folded three times in zig-zag fashion to produce a double trough effect, with consequent increased liquid-retaining capacity, and both of such troughs may be utilized to accommodate the adjacent marginal portions of the napkin.

In a preferred construction, however the twin troughs are not produced one above the other, the inner trough being so formed as to define a narrow medial area of the protector body.

For example, a protector having the final dimensions above suggested may be produced from a piece of plastic or other sheet 2 to 3 inches wider than would otherwise be necessary, and this excess width is taken up by forming two opposed zig-zag folds adjacent to, and equidistant from, the longitudinal centre-line of the piece, whose marginal portions are then folded inwardly as aforesaid.

The initial folding operation produces two opposed troughs extending longitudinally of the protector to receive the edges of a relatively narrow (say, 2 inch wide) strip of napkin material, which will usually be sufficient to absorb any discharge occurring during the night and represents a considerable saving in cost as compared with a full-size napkin such as will normally be inserted in the daytime with its edges in the second or marginal trough.

It will be appreciated that the construction above-described affords a particularly high degree of protection against spillage, since two troughs are always available to receive excess liquid, regardless of whether a small or a large napkin is being used.

If desired, the two closely-spaced folds, and the channel between them which accommodates the narrower napkin, may be formed transversely of the length of the protector instead of parallel thereto.

As a development of the embodiments above described, the protector may be provided with integral or other extensions to enable its location upon an infant's body without the aid of a covering pilch or conventional diaper.

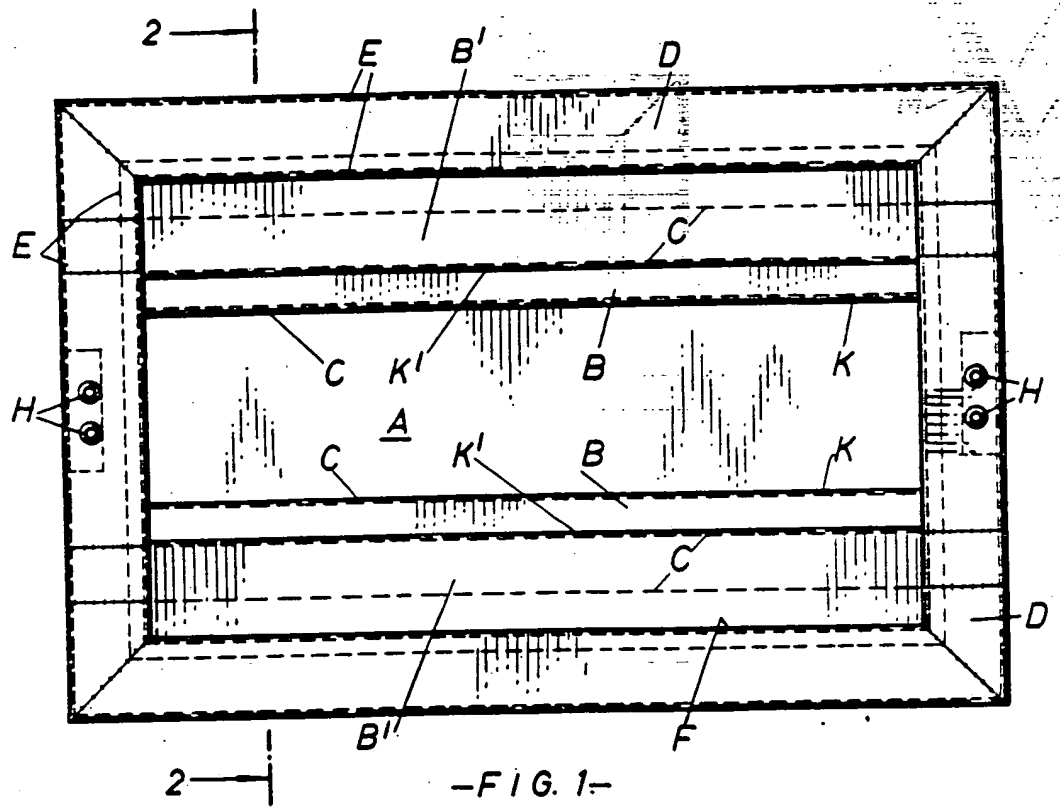
For example, tapes attached to the four corners of the protector may be tied in pairs,

at opposite sides of the infant, or alternatively
the protector may be incorporated in a protective
garment made in the form of a pilch or
panties, the front and rear portions of such
5 garment being brought together at both sides
of the infant and secured by press-studs or
other suitable means. Owing to the effective
protection against spillage afforded by the
trough or troughs aforesaid, the garment in-
10 corporating the protector can be relatively
loose-fitting at the waist and legs, so that the

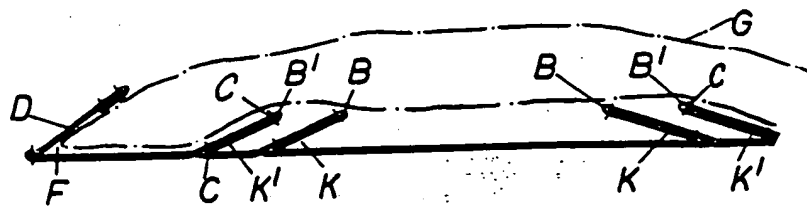
infant is not constricted or overheated thereby.
Whichever construction is employed, the
longer runs of the napkin-locating and liquid-
retaining trough or troughs may, if desired,
be inwardly bowed so as to render the appli-
15 ance less bulky between the infant's legs.

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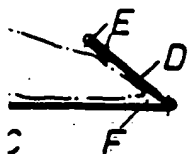
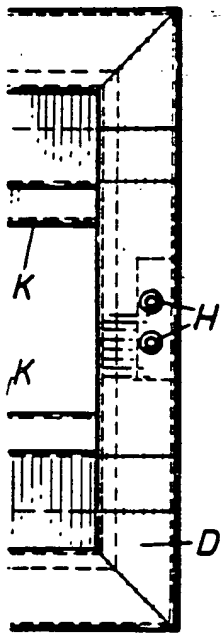
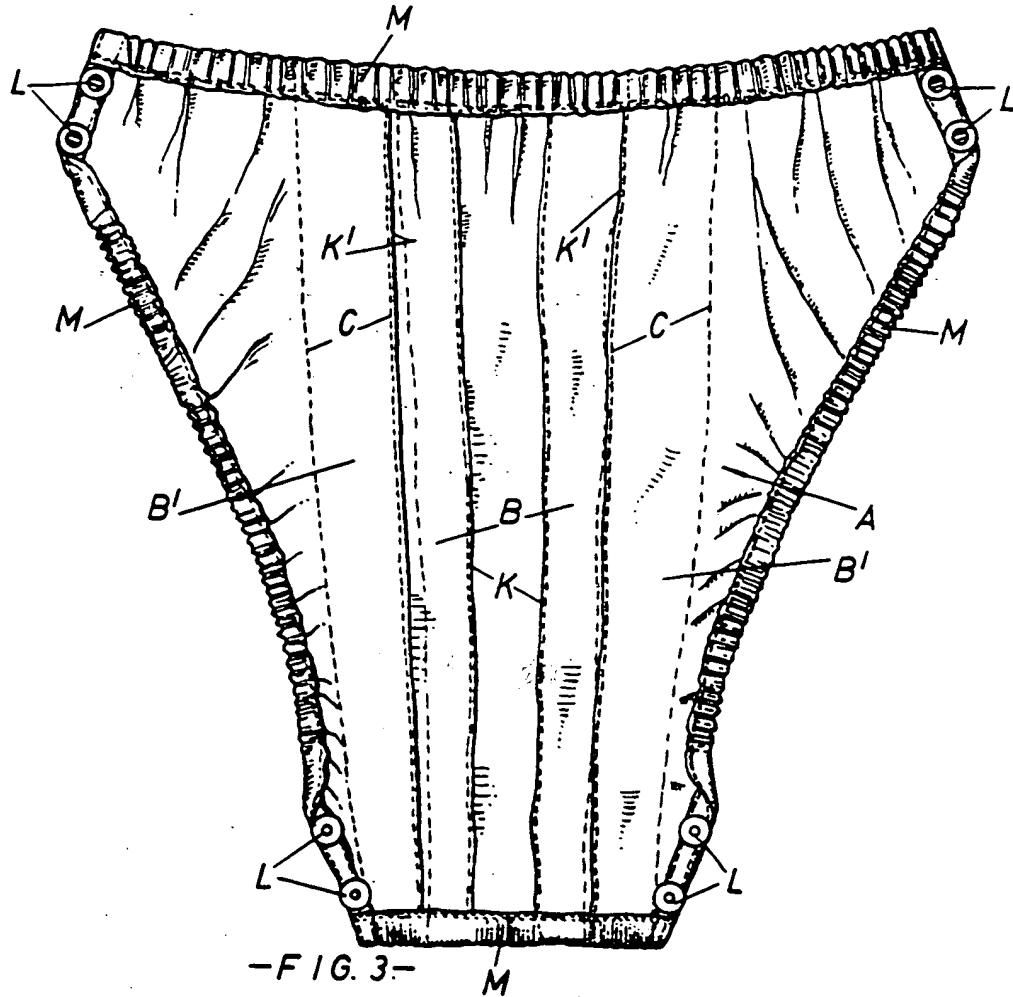
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-FIG. 1-



-FIG. 2-



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